

Wind energy confronts shortage of transmission lines

By Paul Davidson
USA TODAY

As wind farms sprout across the country, they're kicking up a new quandary: how to zap the electricity to homes and businesses that need it.

The USA's wind-power boom, especially in rural parts of Texas, the Midwest and California, is poised to outstrip the capacity of high-voltage lines to send the electricity hundreds of miles to population centers such as Dallas, Chicago and Los Angeles.

The transmission-line shortage is threatening to slow wind energy's breakneck growth and could prevent some states from meeting renewable energy mandates.

Wind power depends on a robust transmission grid. Wind farms are in remote reaches where gusts are strongest, while the greatest power demand is in cities.

Until now, wind developers have piggybacked on existing wires, says analyst Stow Walker of Cambridge Energy Research Associates. But after wind energy soared 45% last year, spare transmission capacity is depleted. Wind power generates more than 1% of U.S. electricity.

Stringing new wires is easier said than done. Wind developers won't go ahead with projects until transmission lines are in place, and utilities are loath to build the lines until they're sure the developers won't back out. Also, the first wind developer in an area is often asked to shoulder much of the \$1.5 million-per-mile cost of a high-voltage line.

In Texas, which has about 25% of U.S. wind power, more eye-popping growth in 2008 is expected to push generation past transmission capacity by 65% by year's end, says Bill Bojorquez, vice president of the Electric Reliability Council of Texas, a power-grid manager.

Wind farms will have to compete to be among the lowest bidders to get on the grid, leaving others off. "Clearly we don't want to build wind farms and have them not run," says Horizon Wind Energy executive Denise Hill.

In southwest Minnesota, dozens of wind projects have been proposed to serve the Twin Cities. Even if just 30% of them, with 7,500 megawatts of capacity, are developed, that would far outpace the 2,000 megawatts of transmission capacity planned.

Similar bottlenecks are stalling wind farms in the Midwest, Southwest and California. Compounding the standoff: Some states don't want residents paying for lines that will largely benefit neighboring states. As a result, utilities in several Midwestern states may

not meet mandates for clean energy to make up about 20% of their energy mix by 2020, says Clair Moeller, an executive for the Midwest grid operator.

Xcel Energy, a Midwest utility, says it can't raise money for transmission lines that might not carry any juice. "You're committing \$1 billion in capital in the hope the cost recovery will come, and that's a tough proposition," says Paul Bonavia, head of Xcel's utilities group.

To break the logjam, officials in Texas, the Southwest, Minnesota and California plan to spread transmission-line costs among multiple wind developers or utilities. But that won't offer near-term relief. A wind farm can be built in 18 months, while a transmission line can take five to 10 years.